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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,385	07/17/2003	Masakazu Taguchi	1614.1346	9625

21171 7590 01/31/2006

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EXAMINER

HALEY, JOSEPH R

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/620,385	TAGUCHI ET AL.	
	Examiner	Art Unit	
	Joseph Haley	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-12 and 14 is/are rejected.
- 7) ☒ Claim(s) 2, 8 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The disclosure is objected to because of the following informalities: Paragraph 10 line 6 the specification states --a an posteriori--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 9-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US 2002/0097815) in view of the applicant's admitted prior art.

In regard to claim 1, Kim teaches a recording/reproducing apparatus that records and reproduces comprising: a burst error detector detecting a burst error part in the reproduction signal (fig. 6 element 620); and a substituting part substituting, for a sampling value included in the burst error part, a predetermined value according to a detected result of said burst error detector (fig. 6 element 640 see also discussion of operation 640 in paragraph 37), however; Kim does not teach a partial response channel, a recording signal produced by encoding data according to a convolutional

code and reproduces the data from a reproduction signal by iterative decoding using likelihood information, said recording/reproducing apparatus.

The applicant's admitted prior art teaches a partial response channel (fig. 1 element 106 see PR channel), a recording signal produced by encoding data according to a convolutional code and reproduces the data from a reproduction signal by iterative decoding using likelihood information (fig. 2)

The two are analogous art because they both deal with the same field of invention of the processing of errors from reproduction signals.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the apparatus of Kim with the applicant's admitted prior art. The rationale is as follows: At the time of invention it would have been obvious to provide the apparatus of Kim with the applicant's admitted prior art because partial response channels and iterative decoding are known and used for high density applications, therefore, it would make the apparatus of Kim useable for a medium of higher density.

In regard to claim 3, the prior art teaches the predetermined value is one of a sampling value and a likelihood information value with which a probability that a data value obtained through the iterative decoding is "0" and a probability that a data value obtained through the iterative decoding is "1" become the same (paragraph 10).

In regard to claim 4, the prior art teaches wherein the likelihood information is a value corresponding to data output from the partial response channel (while the prior art does not teach likelihood information it does teach a partial response channel,

therefore if the two references were put together it would be obvious that the new combination would use a partial response channel).

In regard to claim 5, Kim teaches the likelihood information is a value corresponding to data output through decoding of the convolution code (paragraph 14 lines 1-5).

In regard to claim 6, Kim teaches the burst error detector determines that a sample is included in the burst error part in one of the case wherein the sampling value is greater than a first detection level and the case wherein the sampling value is smaller than a second detection level, where the first detection level is higher than the second detection level (paragraph 12 Kim teaches determining the maximum error region by comparing a signal with a reference signal).

In regard to claims 7 and 11, Kim teaches the substituting part substitutes, after delaying the sampling value, the predetermined value for the sampling value according to a detected result of the burst error detector (fig. 6 element 640. In regard to delaying the sampling value, the input of this value must be delayed because the value is calculated before it is input).

In regard to claim 10, Kim teaches the predetermined operation reduces an amplitude of a signal of the sampling value including the burst error part (paragraph 12 Kim teaches replacing the actual burst signal with a signal that is lower in magnitude than the original signal).

In regard to claims 9 and 12, see claim 1 rejection above.

In regard to claim 14, see claim 3 rejection above.

Allowable Subject Matter

Claims 2, 8 and 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

In regard to claims 2 and 13, the prior art fails to teach using likelihood information from an area other than the burst error part.

In regard to claim 8, the prior art fails to teach controlling the substitution based on the number of times of iteration.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Haley whose telephone number is 571-272-0574. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jrh 


TAN DINH
PRIMARY EXAMINER
11/25/06